THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Appeal No. 96-3019 Application No. 08/386,1361

ON BRIEF

ON PKIEF

Before KIMLIN, WARREN and LIEBERMAN, <u>Administrative Patent</u> <u>Judges</u>.

LIEBERMAN, Administrative Patent Judge.

¹ Application for patent filed February 9, 1995. According to appellants, this application is a continuation of Application No. 08/121,658 filed September 15, 1993, now abandoned; which is a continuation of Application No. 07/811,824 filed December 20, 1991, now abandoned.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 of the examiner's refusal to allow claims 1 through 20, which are all of the claims in the application.²

THE INVENTION

Appellants' invention is directed to a radiation sensitive layer containing a polymer having carboxylic acid anhydride functionality and carboxylic acid t-butyl ester groups, a photoinitiator and a solvent.

THE CLAIMS

Claim 1 is illustrative of appellants' invention and is reproduced below.

² A response under 37 CFR § 1.116, filed December 11, 1995, contained no amendments to the claims. A further response under 37 CFR § 1.116 was filed concurrently with the Brief, dated April 19, 1996 (Paper No. 12). Although, no advisory action was issued, the amendment was refused entry by the examiner in the answer (pages 2-3). Accordingly, the claims before us are as amended in the amendment of July 20, 1995 (Paper No. 21).

1. A radiation-sensitive layer for use as a photoresist which is suitable for the production of submicron structures, comprising:

a polymer component with carboxylic acid anhydride functions and carboxylic acid tert. butyl ester groups, the polymer component being alkali insoluble and soluble in a resist solvent,

a photoinitiator which releases a strong acid when exposed and

a solvent.

1990

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references.

Ito et al. (Ito '628) 4,491,628 Jan. 1,

1985

Sebald et al. (Sebald) 0 388 484 Sep. 26,

1990
(published European Patent Application)

Sezi et al. (Sezi) 0 394 740 Oct. 31,

(published European Patent Application)

Ito et al. (Ito(T)), "Thermolysis and Photochemical Acidolysis of Selected Polymethacrylates," 21 $\underline{\text{Macromolecules}}$, No. 5, pp. 1475-82 (1988).

Appellants rely in their brief on the following references³ as evidence of nonobviousness:

Sezi et al. (Sezi '220) 5,384,220

Jan. 24,

1995

R. Leuschner, M. Beyer et al. (Leuschner), "Progress in Deep-UV Resists Using CARL Technology," Regional Technical Conference: Photopolymers, Principles-Processes and Materials 215-224 (Society of Plastics Engineers, Inc., Mid-Hudson Section, Ellenville, New York, Oct. 1991).

Appellants further rely on the following reference submitted with their reply brief4:

Subhankar Chatterjee, Sangya Jain et al. (Chatterjee), "A Novel Chemically Amplified Positive Deep UV Photoresist With Significantly Reduced Sensitivity to Environmental Contamination," 32 Polymer Engineering and Science, No. 21, 1571-77 (Nov. 1992).

³ These references were submitted by appellants in their amendment of July 20, 1995. It does not appear that Leuschner has been made of record on a PTO-892 or PTO-1449 and we do not do so here.

⁴ The examiner has stated in his letter of June 25, 1996 (Paper No. 31) that he has "fully addressed the new arguments raised by Applicant [sic, appellants] in the Examiner's Answer" and has not otherwise addressed this reference. does not appear that Leuschner has been made of record on a PTO-892 or PTO-1449 and we do not do so here.

THE REJECTION

Claims 1 through 20 stand rejected under 35 U.S.C. § 103 as unpatentable over Sebald or Sezi 5 in view of Ito ('628) or Ito(T).

⁵ We refer in our opinion to the translations of Sebald and Sezi prepared by the U.S. Patent and Trademark Office in July 1992 and April 1992, respectively.

OPINION

Appellants submit that the dependent claims do not necessarily stand or fall together with independent claims 1 and 20. Appellants state, "an argument will be presented as to why all pending claims are patentable over the prior art...," Brief, Page 4. However, no claim is argued with specificity. Accordingly, we treat the claims as standing or falling together. We select claim 1 as representative of appellants' claimed subject matter and limit our consideration to said claim. See 37 CFR § 1.192(c)(7)(1995).

We have carefully considered appellants' arguments for patentability. However, we are essentially in agreement with the examiner that the claimed subject matter is unpatentable in view of the applied prior art. Accordingly, we will sustain the examiner's rejection for essentially those reasons provided in the Answer. In addition, we add our own rationale for affirming the ground of rejection.

In establishing a <u>prima facie</u> case of obviousness, we find that both Sebald, pages 10-11 and Sezi, pages 11-12, disclose copolymers containing anhydride functionality and carboxylic acid ester groups wherein R_3 of Sebald and R^5 of

Sezi may be COOR, and wherein R may be alkyl among a limited number of choices. The species wherein R is tertiary butyl ester is not specifically disclosed by either Sebald or Sezi.

We rely on Ito('628) for its disclosure of carboxylic acid t-butyl ester groups as preferred labile groups in resist compositions. See Ito('628) abstract, column 3, line 2, and Example 5. It would have been obvious to the person having ordinary skill in the art at the time the invention was made to have used carboxylic acid t-butyl ester groups as the specific ester in the anhydride containing copolymer of Sebald or Sezi, as Ito('628) discloses that it is a preferred functional group in resist compositions. Accordingly, a prima facie case of obviousness is established by the combination of the Sebald or Sezi references with Ito('628).

As a rebuttal to the <u>prima facie</u> case of obviousness, appellants rely on the Conference Report by Leuschner. See Exhibit A attached to the Brief. Appellants argue that the improvements provided by the Conference Report, "could not be expected and was completely surprising to those skilled in the art." See Brief, page 7. Having reviewed the data present in the conference report, we conclude that appellants have not

met thier burden of showing unexpected results. <u>In re Klosak</u>, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). It is not sufficient to assert that the results obtained are unusual or unexpected. The burden of showing unexpected results rests on they who assert them.

Appellants argue that a direct comparison of a t-butyl ester with t-butyl carbonate shows that shrinkage in the case of t-butyl ester is markedly less. See Brief, page 5. argument is not persuasive because appellants have not presented a comparison with the closest prior art. See In re Baxter Travenol Labs., 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); In re De Blauwe, 736 F.2d 699, 705, 222 USPO 191, 196 (Fed. Cir. 1984). Appellants rely on the Conference Report of Leuschner to disclose that t-butyl carbonate groups and t-butyl ester groups are not equivalent. They further rely on Chatterjee, submitted with the Reply Brief, in support of their position. See Reply Brief, page 2. However, we agree with the examiner and find that the polymers exemplified by Leuschner and Chatterjee directed to t-butoxy carbonyl imide are not within the scope of the prior art references and hence do not represent the closest prior art. See Answer,

page 7. The disclosures of Sebald and Sezi, and Ito('628) are drawn respectively to pendant carboxylic acid esters generally and t-butyl methacrylate esters specifically. In contrast, we find that Leuschner compares t-butyl methacrylate with t-butoxy carbonyl imide. See the illustration for P_2 and P_3 on page 222 of exhibit A.

Furthermore, in comparing P₂ and P₃ of Leuschner, appellants compare a polymer having 20 mole percent t-butoxy carbonyl imide with a polymer having 60 mole percent t-butyl methacrylate. Accordingly, in view of the very substantial difference in mole percent of the functional groups, we further find P₂ and P₃ of Leuschner to be an inappropriate side by side comparison. Moreover, even were the evidence otherwise persuasive, the single example presented by appellants is not commensurate in scope with the claimed subject matter. Based on the record before us, we find that the results demonstrated in the Leuschner exhibit are not based on the closest prior art or commensurate in scope with the appealed claims and, are entitled to little, if any, weight with respect to the patentability of the claimed subject matter over the combined teachings of Sebald, Sezi and

Ito('628). See <u>In re Burckel</u>, 592 F.2d 1175, 1180, 201 USPQ
67, 71 (CCPA 1979); <u>In re Lindner</u>, 457 F.2d 506, 508, 173 USPQ
356, 358 (CCPA 1972).

Accordingly, based on our consideration of the totality of the record before us, and having evaluated the <u>prima facie</u> case of obviousness in view of appellants' arguments and evidence, we conclude that the preponderance of evidence weighs in favor of obviousness of the claimed subject matter within the meaning of

§ 103. See <u>In re Oetiker</u>, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

DECISION

In summary, we have affirmed the examiner's grounds of rejection under § 103. However, because our additional rationale for affirming the grounds of rejection under § 103 materially differs from that of the examiner as we have set forth above, we have designated our affirmance as involving a new ground of rejection pursuant to 37 CFR § 1.196(b)(1997).

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides, "A new ground of rejection shall not be considered final for purposes of judicial review."

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

- (b) Appellants may file a single request for rehearing within two months from the date of the original decision
- 37 CFR § 1.196(b) also provides that the appellants,

 WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise

one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

- (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .
- (2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

Should the appellants elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final

action on the affirmed rejection, including any timely request for rehearing thereof.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR $\S 1.136(a)$.

AFFIRMED, 1.196(b)

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EDWARD C. KIMLIN

Administrative Patent Judge
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BOARD OF PATENT

CHARLES F. WARREN

Administrative Patent Judge
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PAUL LIEBERMAN

Administrative Patent Judge
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